

# Yuma Almanac vs. TLE format comparison

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## Yuma Almanac

- Angle unit: **[rad]**
- ToA given in **[s]** from the start of week (**GPS week epoch**)
- **Unscaled** Orbit Eccentricity
- **Non-null** Rate of Right Ascension
- Specifies the **Squared root of orbit major semi-axis [m]**
- Specifies the Ascending Node **Longitude at the GPS week epoch**

## TLE

- Angle unit: **[degrees]**
- ToA given in **[days]** from the **start of current year**
- Orbit Eccentricity scaled by  **$10^7$**
- Rate of Right Ascension = **0**
- Specifies the **mean motion in [revolutions/day]**
- Specifies the Ascending Node **Right Ascension at the ToA**